

Appl. No.: 10/662,682  
TC/A.U.: 3711 Docket No.: C03-05  
Reply to Office Action of May 11, 2005

### **REMARKS**

New claims 57-84 appear in this application for the Examiner's review and consideration.

Claims 1-56 have been cancelled without prejudice to Applicants' right to file one or more continuing applications directed to any subject matter not presently claimed.

New claims 57-84 have been added. No new matter has been added by these amendments and additions.

### **Rejection Under 35 U.S.C. § 112, First Paragraph**

Claims 11 and 47 were rejected under 35 U.S.C. § 112, first paragraph as the specification does not reasonably provide enablement for the second portion to be formed of titanium alloy. Claims 11 and 47 have been herein cancelled therefore making this rejection moot and their content has not been included in any of the new claims.

### **Rejection Over McKeighen**

Claims 34-36 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,429,365 to McKeighen.

McKeighen is generally directed to a method of manufacturing a club head and does not attempt to make a disclosure relating to performance regardless of whether that performance be spin rates, COR, position of the center of gravity, etc. McKeighen discloses "a triangular-shaped wedge that is placed in the center of the back side the striking face" . . . "the purpose of this wedge is to give greater structural integrity to the striking face". (Col. 2, lines 29-39). Clearly, while this added weight near the striking face will widen the sweet spot between the heel and toe, it will do little to affect the position of the sweet spot in the vertical plane, and more importantly it will not move the center of gravity rearward which is one of the desired principles as taught by the present invention. In fact it will do just the opposite, in that it will maintain the center of gravity close to the front face, and that definitely is not what is desired in the present invention.

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Also, McKeighen does not teach that the hosel is a unique third part of the club head and he definitely does not address that changing of the weight location from the hosel area to another area significantly affects the hitting dynamics of the club head.

It appears that the Examiner has made the assumption that the club head of McKeighen inherently has a spin rate to launch angle ratio of less than about 275 because McKeighen teaches the same structure (a wider face at the bottom than at the top) as claimed by the Applicants. The Applicants must respectfully disagree with the Examiner on this matter, and must state that the structure of McKeighen is not in any manner similar to the Applicants' club head construction and certainly will not produce the same performance levels. This is especially true if one looks at Fig. 9 of McKeighen and compares it to Figs. 3 and 6 of the present invention, with a particular view of: the weight positioning within the club heads; the flexibility or elasticity built into the striking face of the club heads; or the overall size of the second body portion of the Applicants' club head versus that of McKeighen. To state that a driver would inherently reproduce the same performance levels as another driver based on overall appearances is simply not true. For instance, the Titleist® 983K is very similar in appearance to the club head of the present invention, yet at identical club speed, launch angle, and same type of PRO V1 ball hit, it produces a spin rate that is approximately 500 rpm higher than that produced by the club head of the present invention. The difference in spin rates are a result of the innovative design changes in the present invention.

It was mentioned above that McKeighen has a relatively large triangularly shaped wedge behind the lower face. In Fig. 13a of the present specification, the preferred front face section of the present invention is shown. It is to be appreciated that the design concept shown does not seek to create a thick front face at the sole section (since it is only about 0.20 inch at that point) but rather to taper the face as it progresses upwards (to about 0.08 inch), and it should be noted that it is the very thin upper face thickness that provides the flexibility that is desired for creating a high COR. Certainly the front face of McKeighen does not provide this flexible face construction and therefore could not inherently have a similar spin rate to launch angle as that produced by the present invention. It would be very hard for the club head as described by McKeighen to have a COR greater than 0.78.

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It would be virtually impossible for the Applicants' to provide test comparisons against all prior art club heads, because that would encompass thousands of different club heads, a majority of which are no longer even available. The Applicants, as assignors to the Acushnet Company, have compared the club head of the present invention against the commercially successful Titleist® 983K driver, which as previously stated is similar in appearance. The Applicants, in designing their improved club head, have made virtually no changes to the size or shape of the Titleist® 983K club head, but have only changed the materials of construction as claimed in the application. With material changes to the first portion, second portion and hosel member, the Applicants have received significant and unexpected test results. As stipulated in the specification, the test results were all conducted using a standard robot (as described in the specification and used by most golf club manufacturers), Titleist PRO V1 balls, 2° angle of attack and a 110 mph club impact. The results were correlated between the Titleist® 983K and the present invention club head and these results are listed in the specification. These results are presented to demonstrate the overall affect of changing the materials of construction and repositioning the weights to more desired locations. When presenting the test data, the type of shaft used is immaterial since the fixed constants of speed, launch angle, type of ball and robot are used for both club heads.

The Applicants are appreciative of some of the reasons for the Examiner's rejections and have cancelled claims 34-36 and have presented new claims 73-85 to further define the inventive concepts.

For claims to be rejected under 35 U.S.C. § 102(b), each and every element as set forth in the claims of the present invention must be found, either expressly or inherently, in a single prior art reference. Applicants respectfully submit that McKeighen does not disclose all the elements of the claimed invention.

Accordingly, independent claim 73 is believed to be in condition for allowance for at least the reasons set forth above. Moreover, the remaining claims 74-85 depend from the claim discussed above and add additional features. These claims are believed to be patentable for the totality of the claimed inventions therein and by virtue of their dependence from the independent claim. As such, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

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**Rejection Over Chen In View of Aizawa *et al.* and further in view of Molitor *et al.***

Claims 1-3, 7-10, 12-17, 19-20, 34-39, 43-46, 48-53, and 55-56, were rejected under 35 U.S.C. § 103(a) as being obvious over USPN 5,494,281 to Chen, in view of USPN 5,697,854 to Aizawa *et al.* and in view of USPN 4,762,322 to Molitor *et al.*

Chen is generally directed to a golf club head with shock-absorbing features and the only similarity it shows to the present invention is that it has a first body portion and a second body portion forming a crown and skirt of a density less than the first portion. Chen also discloses a sole plate of a heavy metal that may be added to lower the center of gravity. Aizawa *et al.* teaches a specific and novel manufacturing method for placing a weight on the sole of a club head so that it will be difficult to displace, but the present invention does not place a weight plate on the bottom of the sole to lower the center of gravity. Molitor *et al.* teaches of a club head having a center of gravity no more than 0.7 inch above the sole and 0.5 inch rearward of the centerline of the club shaft. It accomplishes this not by coordinating the densities of the first, second and second body portions and hosel member, as done by the Applicants, but rather by removing mass (and therefore weight) from the hosel and heel sections (and therein physically altering the shape of the club head) and adding bulk to the toe area. However, the present invention maintains the classic look of its driver and accomplishes the shifting of the center of gravity by the coordination of lighter materials of construction and redistributing heavier materials in areas where it of the greatest benefit.

Although the Applicants' have cancelled claims 1-56, the basic concepts have been rewritten into new claims 57-84.

Regarding the rejections of claims 1 and 2, Chen teaches the face being one material and the rest of the club of a lower density material. Both Chen and Aizawa teach of sole plates placed on the exterior of the sole which as well known will lower the center of gravity. Molitor claims a center of gravity no more than 0.7 inch from the sole. Applicants do not add any weight plates and the center of gravity of the Applicants' club head is more than 0.70 inch. Applicants have presented new claim 57 which states that the first body portion also includes a sole section which is not the case with Chen' construction. Applicants have also claimed the hosel member being formed of a third material. As for the center of gravity being at any point in the club head, one can design

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a club head wherein the center of gravity is located virtually any where within the club head, but that is not the case here. The Applicants could have a lower center of gravity built into their club head if that were desired, or a higher point if that were desired. What is important is the use of the various material to create a club head that produces the claimed end results.

Claims 3, 7-20, are all dependent upon adding limitations to an allowed independent claim and therefore their concepts which have been incorporated into new claims 58 to 72 and are allowable only if the independent claim 57 in combination with the specific claim is allowable. The new claims specifically claim materials of construction for the crown and skirt sections as well as the hosel member that have not been previously disclosed.

Claims 34 and 35 have been rejected under 35 U.S.C. § 103(a) and the Examiner has relied upon Molitor et al. showing a center of gravity no more than 0.7 inch above the sole. Clearly the Applicants' center of gravity is more than 0.7 inch above the sole. These claims, which are now presented in new claims 73-84, address the launch angle ratio achieved by this club head. There is no citation in the cited references that achieves these launch angle ratios, and as stated above, none of the references disclose the construction of the Applicant's club head.

Claims 37-39 were rejected under 35 U.S.C. § 103(a) and the content of the independent claim 37 focuses upon the hosel being of a third material. Dependent claim 44 suggests that the hosel could be a thermoplastic and the new claim 60 specifies that nylon is the preferred material for the hosel. This is not taught by any of the references. For reasons stated above the dependent claims 43, 44, 45, 46, 48-53, and 55-56, are depend upon the patentability of the independent claim.

**Rejection Over Chen In View of Aizawa in view of Molitor et al. and McKeighen**

Claims 18, 21, 24-33, and 54, were rejected under 35 U.S.C. § 103(a) over Chen in view of Aizawa et al., Molitor et al., and McKeighen. This rejection addresses the gradient front face, which is thicker at the sole and tapers to a less thick upper face. The new claims rewritten by the Applicants more clearly stress their disclosure in which a relatively thick (yet thin compared to McKeighen) front face at the sole section



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gradiently reduces to a very thin front face at the crown section. No effort was made to the present invention club head to have a thick front face as seen in the McKeighen patent. The front face of the Applicant's achieves a measure of elasticity and therein a COR that could never be achieved with the front face as shown by McKeighen. One will note that a high COR was never discussed in the McKeighen patent and as stated above, it would be hard for a club head of that design to achieve more than 0.78 COR.

The Applicants must take exception to the Examiner's reliance upon the cited prior art inherently teaching what has been claimed. The Applicants claim a COR greater than 0.80 (it actually approaches 0.83 which is the maximum allowed by the U.S.G.A.) and most clubs made today seek a greater COR than 0.80. However, based upon the construction of the cited patents there is no reason to believe that a COR of greater than 0.80 is inherent, especially when one examines their constructions.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or combine the teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, not in Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Aizawa et al., Molitor et al., and McKeighen all fail cure the deficiencies of Chen. There is no motivation to modify the references or any reasonable expectation of success in their combination. Chen's club head was designed to provide a shock-absorbing casing. Aizawa et al. relates to a method of placing a weight onto the sole of a club head. Molitor et al. removes weight from the heel section and builds up the toe to create a wider sweet spot. Molitor also teaches lowering the center of gravity and moving it back from the face, but Molitor clearly states that the center of gravity is not more than 0.7 inch above the sole. The center of gravity of the present invention is clearly more than 0.7 inch above the sole. And, clearly the club head shown in McKeighen would not be confused with the club head of the present invention. The Examiner has used McKeighen to demonstrate the obviousness of the thicker front face at the sole. McKeighen does not taper gradiently from a relatively thin lower area to an extremely thin upper as does the instant invention, but rather McKeighen teaches

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placing a rather large weight in back of the lower front face. The weight placement of McKeighen may have some benefit in providing great durability, but it would appear that it is at the expense of flexibility which is important if you want a high COR across a large striking face.

The rejection under 35 U.S.C. § 103(a) is believed to have been overcome for at least the above reasons. Applicants respectfully request reconsideration and withdrawal thereof.


### Conclusion

Based on the remarks set forth above, Applicants believe that all of the rejections have been overcome and the claims of the subject application are in condition for allowance. Should the Examiner have any further concerns or believe that a discussion with the Applicants' agent would further the prosecution of this application, the Examiner is encouraged to call the agent at the number below.

No fee is believed to be due for this submission. However, should any required fees be due, please charge them to Acushnet Company Deposit Account No. 502309.

Respectfully submitted,

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Date

  
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